AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application. A clean version of the amended claims can be found in **Appendix A**.

Listing of claims:

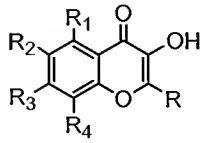
1. **(Currently Amended)** A method comprising:

photochemically generating an oxidopyrylium species from a 3-hydroxychromone derivative; and

performing a cycloaddition reaction between the oxidopyrylium species and a dipolarophile to form a cycloadduct ~~Use of an oxidopyrylium species as an intermediate in a chemical reaction, wherein the oxidopyrylium species is generated photochemically~~.

2. **(Currently Amended)** The ~~use as in~~ method of claim 1, wherein the oxidopyrylium species is generated via a process comprising an excited state intramolecular proton transfer.

3. **(Currently Amended)** The ~~use as in~~ method of claim ~~2~~ 1, wherein the oxidopyrylium species is photochemically generated from a 3-hydroxychromone derivative with the following chemical structure:



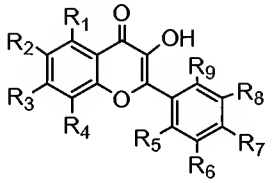
(I)

wherein R_1, R_2, R_3, R_4 and R are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$,

$-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

4. **(Currently Amended)** The ~~use as in~~ method of claim ~~2~~ 1, wherein the oxidopyrylium species is photochemically generated from a ~~3-hydroxyflavone~~ 3-hydroxychromone derivative with the following chemical structure:

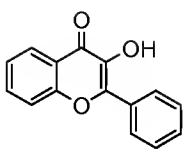
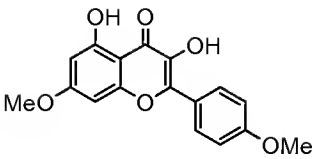
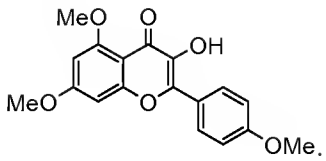


(II)

wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8 and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHC1_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

5. **(Currently Amended)** The ~~use as in~~ method of claim 4, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:

6-7. **(Cancelled)**

8. **(Currently Amended)** The ~~use as in~~ method of claim ~~7~~ 1, wherein the cycloaddition reaction comprises a 1,3-dipolar cycloaddition reaction.

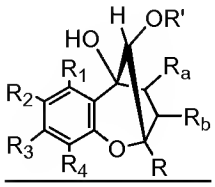
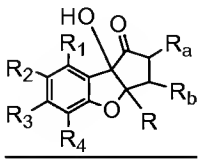
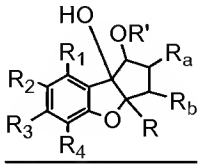
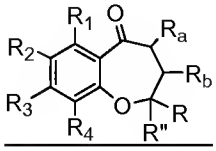
9. **(Currently Amended)** The ~~use as in~~ method of claim ~~7~~ 1, ~~wherein the chemical reaction~~ further ~~comprises~~ comprising converting the cycloadduct ~~formed~~.

10-16. **(Cancelled)**

17. **(Currently Amended)** The method of claim ~~15~~ 1, wherein the dipolarophile is a cinnamate derivative.

18. **(Cancelled)**

19. **(Currently Amended)** The method of claim ~~18~~ 9, ~~wherein the adduct formed comprises an aglain core structure and~~ wherein ~~converting~~ the cycloadduct ~~formed results in formation of~~ is converted into a compound ~~ring system~~ selected from the group consisting of: ~~an aglain ring system, a rocaglamide ring system, and a forbaglin ring system.~~

(VI) **(VII)** **(VIII)** **(IX)**

wherein:

R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic,

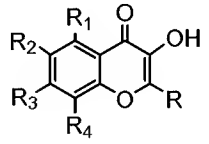
heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$; and

R_1, R_2, R_3, R_4, R, R", R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

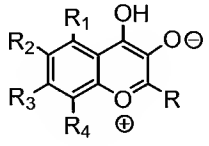
20. **(Currently Amended)** The method of claim 1, wherein:

the 3-hydroxychromone derivative is of formula **(I)**:



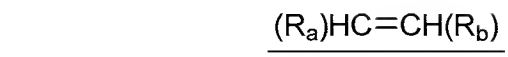
(I);

the oxidopyrylium species is of formula ($\mathbf{I_T}$):



(I$_T$);

the dipolarophile is of formula **(IV)**:



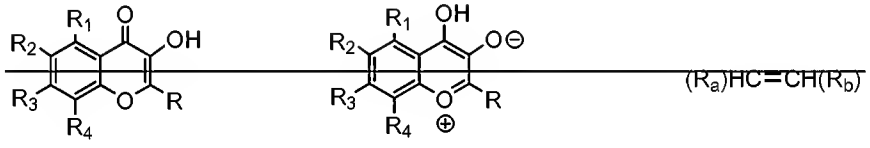
(IV);

and the cycloadduct is of formula **(V)**:

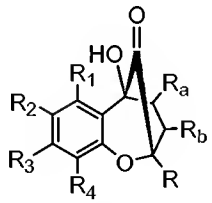
~~A method for preparing a compound with an aglain core structure, the method comprising steps of:~~

~~producing an oxidopyrylium species (I$_T$) by photoinduced excited-state intramolecular proton transfer of a 3-hydroxychromone derivative (I); and~~

~~reacting the oxidopyrylium species with a dipolarophile (IV) to obtain the aglain core-containing compound (V), wherein compounds (I), (I$_T$), (IV) and (V) have the following chemical structures:~~



~~(I)~~ ~~(I$_T$)~~ ~~(IV)~~



(V)

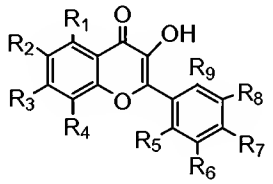
wherein R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $\underline{-CHCl_2}$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, -

$OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

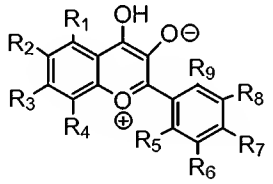
21. **(Currently Amended)** The method of claim 1, wherein:

the 3-hydroxychromone derivative is of formula (**II**):



(II);

the oxidopyrylium species is of formula ($\mathbf{II_T}$):



(II_T);

the dipolarophile is of formula (**IV**):

$(R_a)HC{=}CH(R_b)$

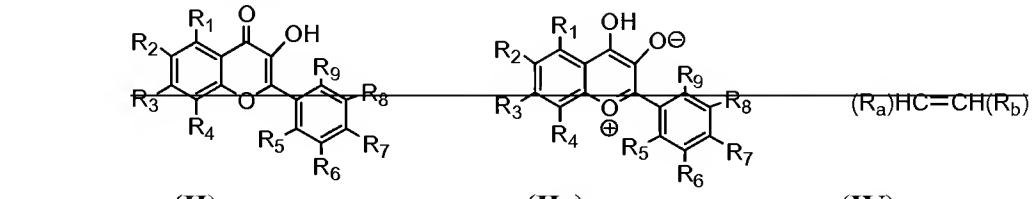
(IV);

and the cycloadduct is of formula (**V'**):

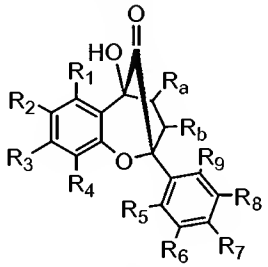
~~A method for preparing a compound with an aglain core structure, the method comprising steps of:~~

~~producing an oxidopyrylium species (H_1) by photoinduced excited state intramolecular proton transfer of a 3-hydroxyflavone derivative (II); and~~

~~reacting the oxidopyrylium species with a dipolarophile (IV) to obtain the aglain core-containing compound (V'), wherein compounds (II), (H_1), (IV) and (V') have the following chemical structures:~~



~~(II)~~ ~~(H_1)~~ ~~(IV)~~

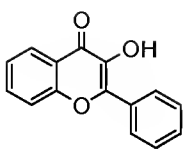
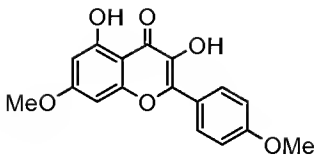
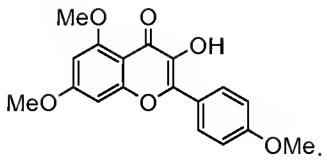


(V')

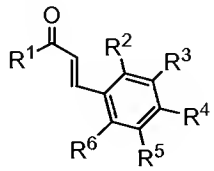
wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHC1_2$,]] $\underline{-CHCl_2,}$ $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

22. **(Currently Amended)** The method of claim 21, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:

23. **(Currently Amended)** The method of claim 20 or 21, wherein the dipolarophile (**IV**) is a ~~cinnamate derivative~~ compound with the following chemical structure:



wherein R^1 is selected from the group consisting of hydrogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, and a protecting group; and

wherein R^2, R^3, R^4, R^5, and R^6 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHC1_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

24-29. **(Cancelled)**

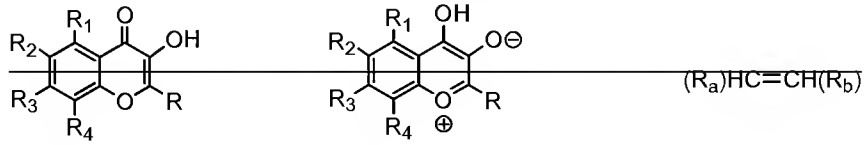
30. **(Currently Amended)** The method of claim 20, further comprising ~~A method for preparing an aglain derivative, the method comprising steps of:~~

~~producing an oxidopyrylium species (I_1) by photoinduced excited state intramolecular~~

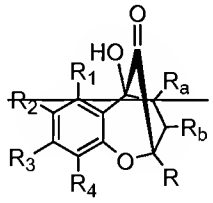
~~proton transfer of a 3-hydroxychromone derivative (I);~~

~~reacting the oxidopyrylium species with a dipolarophile (IV) to obtain a compound with an aglain core structure (V); and~~

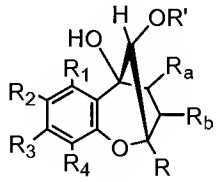
converting the compound of formula (V) ~~with an aglain core structure~~ into ~~an aglain derivative~~ a compound of formula (VI): ~~(VI), wherein compounds (I), (I_1), (IV), (V) and (VI) have the following chemical structures:~~



~~(I)~~ ~~(I_1)~~ ~~(IV)~~



~~(V)~~



(VI)

~~wherein R_1, R_2, R_2, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, NO_2, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,~~

~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl; and~~

wherein R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$,

$-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$,

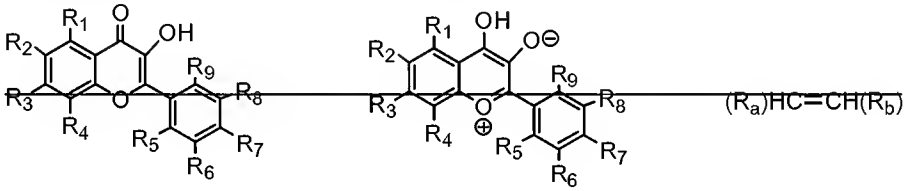
wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

31. **(Currently Amended)** The method of claim 21, further comprising ~~A method for preparing an aglain derivative, the method comprising steps of:~~

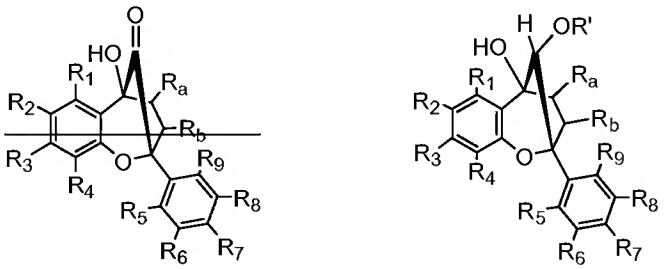
~~producing an oxidopyrylium species (**H$_1$**) by photoinduced excited state intramolecular proton transfer of a 3-hydroxyflavone derivative (**II**);~~

~~reacting the oxidopyrylium species with a dipolarophile (**IV**) to obtain a compound with an aglain core structure (**V'**); and~~

converting the compound of formula (**V'**) ~~with an aglain core structure~~ into a compound of formula (**VI'**): ~~an aglain derivative (**VI'**), wherein compounds (**II**), (**H$_1$**), (**IV**), (**V'**) and (**VI'**) have the following chemical structures:~~



~~(**II**)~~ ~~(**H$_1$**)~~ ~~(**IV**)~~



~~(**V'**)~~ (**VI'**)

~~wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, $-CN$, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$,~~

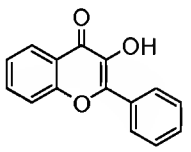
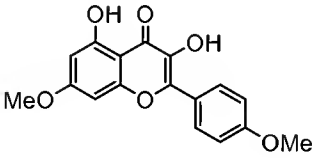
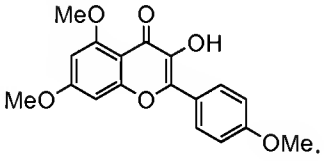
~~$-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,~~

~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl; and~~

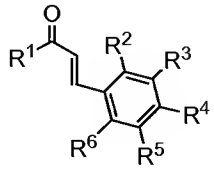
wherein R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$,and $-N(R_x)S(O)_2R_x$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

32. **(Currently Amended)** The method of claim 31, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:

33. **(Currently Amended)** The method of claim 30 or 31, wherein the dipolarophile **(IV)** is a ~~cinnamate derivative~~ compound with the following chemical structure:



wherein R^1 is selected from the group consisting of hydrogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic,

heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, and a protecting group; and

wherein R^2, R^3, R^4, R^5, and R^6 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $\underline{-CHCl_2}$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

34. **(Currently Amended)** The method of claim 30 or 31, wherein converting the compound of formula (V) or (V') ~~with an aglain core structure~~ into a compound of (VI) or (VI') ~~an aglain derivative~~ comprises a reduction.

35. **(Original)** The method of claim 34, wherein the reduction comprises using $NaBH_4$ or $Me_4BH(OAc)_3$.

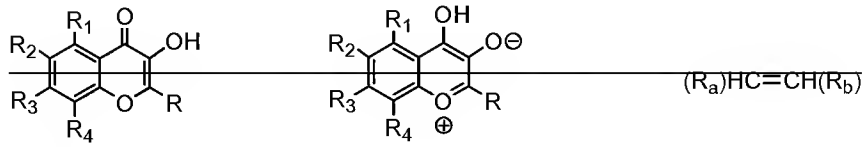
36. **(Currently Amended)** The method of claim 30 or 31, wherein converting the compound of formula (V) or (V') ~~with an aglain core structure~~ into a compound of (VI) or (VI') ~~an aglain derivative~~ comprises addition of a nucleophile.

37. **(Currently Amended)** The method of claim 20, further comprising ~~A method for preparing a rocaglamide derivative, the method comprising steps of:~~

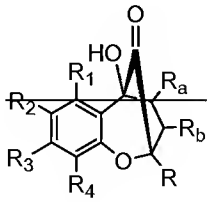
~~producing an oxidopyrylium species (I$_1$) by photoinduced excited state intramolecular proton transfer of a 3-hydroxychromone derivative (I);~~

~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V); and~~

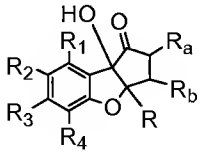
converting the compound of formula (V) ~~with an aglain core structure~~ into a compound of formula (VII): ~~a rocaglamide derivative (VII), wherein compounds (I), (I_1), (IV), (V), and (VII) have the following chemical structures:~~



~~(I)~~ ~~(I_1)~~ ~~(IV)~~



~~(V)~~



(VII)

~~wherein R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino-alkyl, arylamino, amino-aryl, a protecting group, NO_2, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_2$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,~~

~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl~~.

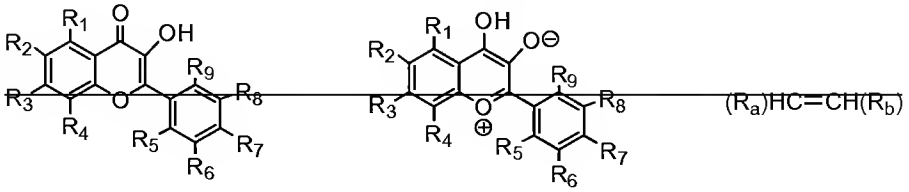
38. **(Currently Amended)** The method of claim 21, further comprising ~~A method for preparing a rocaglamide derivative, the method comprising steps of:~~

~~producing an oxidopyrylium species (H_1) by photoinduced excited state intramolecular proton transfer of a 3-hydroxyflavone derivative (II);~~

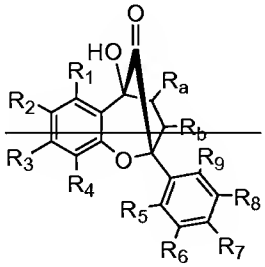
~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V'); and~~

converting the compound of formula (V') ~~with an aglain core structure~~ into a compound

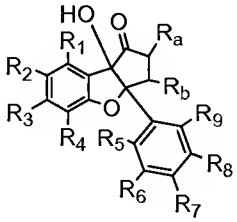
of formula (**VII'**): ~~a rocaglamide derivative (**VII'**), wherein compounds (**II**), (**II$_1$**), (**IV**), (**V'**), and (**VII'**) have the following chemical structures:~~



~~(**II**)~~ ~~(**II$_1$**)~~ ~~(**IV**)~~



~~(**V'**)~~

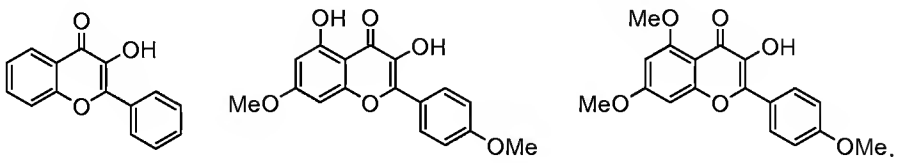


(**VII'**)

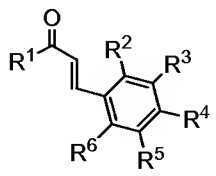
~~wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, $-CN$, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,~~

~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl~~.

39. **(Currently Amended)** The method of claim 38, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:



40. **(Currently Amended)** The method of claim 37 or 38, wherein the dipolarophile (**IV**) is a ~~cinnamate derivative~~ compound with the following chemical structure:



wherein R^1 is selected from the group consisting of hydrogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, and a protecting group; and

wherein R^2, R^3, R^4, R^5, and R^6 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$[[,]];

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

41. **(Currently Amended)** The method of claim 37 or 38, wherein converting the compound of formula (**V**) or (**V'**) ~~with an aglain core structure~~ into a compound of formula (**VII**) or (**VII'**) ~~a rocaglamide derivative~~ comprises an α-ketol (acyloin) rearrangement and, optionally, a hydroxyl-directed reduction.

42. **(Original)** The method of claim 41, wherein the α-ketol (acyloin) rearrangement comprises a base-mediated reaction.

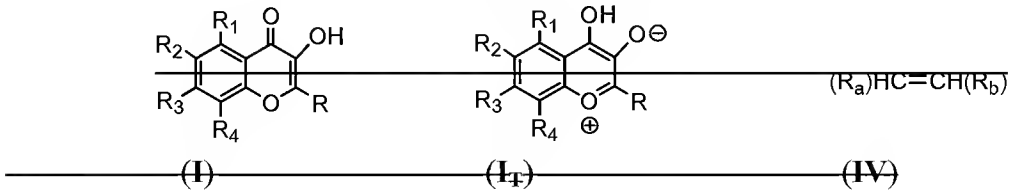
43. **(Currently Amended)** The method of claim 20, further comprising ~~A method for~~

~~preparing a rocaglamide derivative, the method comprising steps of:~~

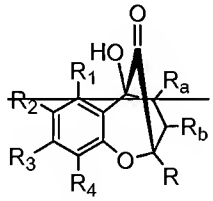
~~producing an oxidopyrylium species (I_1) by photoinduced excited state intramolecular proton transfer of a 3-hydroxychromone derivative (I);~~

~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V); and~~

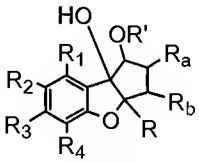
converting the compound <u>of formula (V)</u> ~~with an aglain core structure~~ into <u>a compound of formula (VIII)</u>: ~~a rocaglamide derivative (VIII), wherein compounds (I), (I_1), (IV), (V), and (VIII) have the following chemical structures:~~



~~(I)~~ ~~(I_1)~~ ~~(IV)~~



~~(V)~~



(VIII)

~~wherein R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, NO_2, CN, CF_3, CH_2CF_3, [[$CHCl_2$,]] <u>$CHCl_2$,</u> CH_2OH, CH_2CH_2OH, $CH_2SO_2CH_3$, $C(=O)R_x$, $CO_2(R_x)$, $C(=O)N(R_x)_2$, $OC(=O)N(R_x)_2$, $OC(=O)R_x$, OCO_2R_x, $S(O)R_x$, $S(O)_2R_x$, $NR_x(CO)R_x$, $N(R_x)CO_2R_x$, $N(R_x)C(=O)N(R_x)_2$, $N(R_x)S(O)_2R_x$, and $S(O)_2N(R_x)_2$;~~

~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl; and~~

wherein R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic,

aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$,

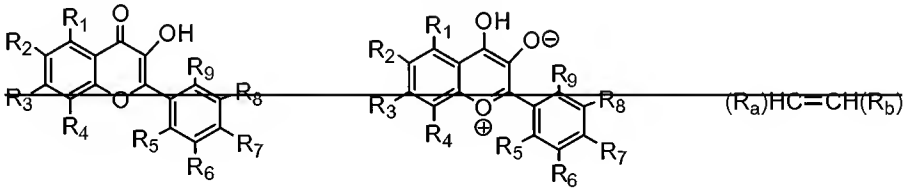
wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

44. **(Currently Amended)** The method of claim 21, further comprising ~~A method for preparing a rocaglamide derivative, the method comprising steps of:~~

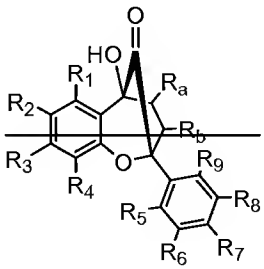
~~producing an oxidopyrylium species (H_1) by photoinduced excited state intramolecular proton transfer of a 3-hydroxyflavone derivative (II);~~

~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V'); and~~

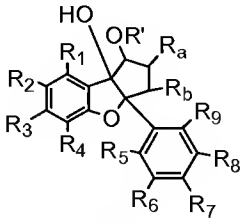
converting the compound of formula (V') ~~with an aglain core structure~~ into a compound of formula (VIII'): ~~a rocaglamide derivative (VIII'), wherein compounds (II), (H_1), (IV), (V'), and (VIII') have the following chemical structures:~~



~~(II)~~ ~~(H_1)~~ ~~(IV)~~



~~(V')~~



(VIII')

~~wherein R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic,~~

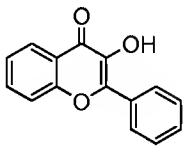
~~aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, $-CN$, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,~~

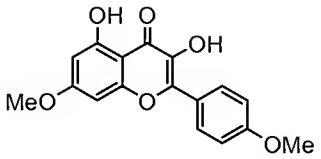
~~wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl; and~~

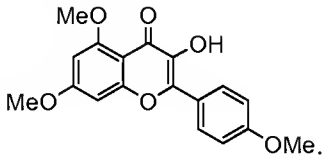
wherein R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

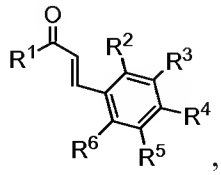
45. **(Currently Amended)** The method of claim 44, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:







46. **(Currently Amended)** The method of claim 43 or 44, wherein the dipolarophile (**IV**) is a ~~cinnamate derivative~~ compound with the following chemical structure:



,

wherein R^1 is selected from the group consisting of hydrogen, hydroxy, alkoxy, aryloxy,

heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, and a protecting group; and

wherein R^2, R^3, R^4, R^5, and R^6 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHC1_2$,]] $\underline{-CHCl_2}$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

47. **(Currently Amended)** The method of claim 43 or 44, wherein converting the compound of formula (V) or (V') ~~with an aglain core structure~~ into a compound of formula (VIII) or (VIII') ~~a rocaglamide derivative~~ comprises an α-ketol (acyloin) rearrangement and, optionally, a hydroxyl-directed reduction.

48. **(Original)** The method of claim 47, wherein the α-ketol (acyloin) rearrangement comprises a base-mediated reaction.

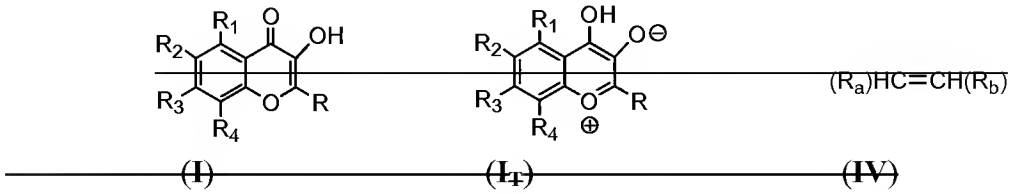
49. **(Currently Amended)** The method of claim 20, further comprising ~~A method for preparing a forbaglin derivative, the method comprising steps of:~~

~~producing an oxidopyrylium species (I$_1$) by photoinduced excited state intramolecular proton transfer of a 3-hydroxychromone derivative (I);~~

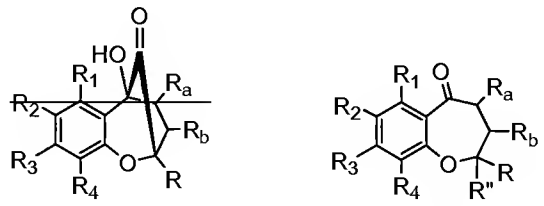
~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V); and~~

converting the compound of formula (V) ~~with an aglain core~~ into a compound of formula

(IX): ~~a forbaglin derivative (IX), wherein compounds (I), (I_1), (IV), (V) and (IX) have the following chemical structures:~~



~~(I)~~ ~~(I_1)~~ ~~(IV)~~



~~(V)~~ **(IX)**

wherein ~~R_1, R_2, R_3, R_4, R, R", R_a and R_b are identical or different and~~ R" is selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

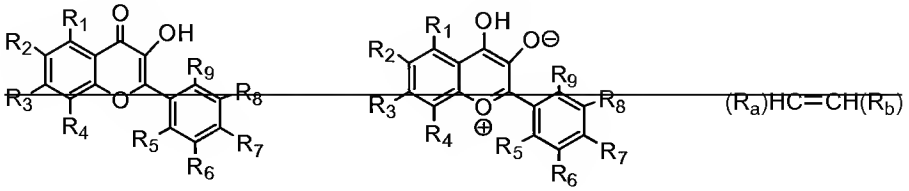
50. **(Currently Amended)** The method of claim 21, further comprising ~~A method for preparing a forbaglin derivative, the method comprising steps of:~~

~~producing an oxidopyrylium species (H_1) by photoinduced excited state intramolecular proton transfer of a 3-hydroxyflavone derivative (II);~~

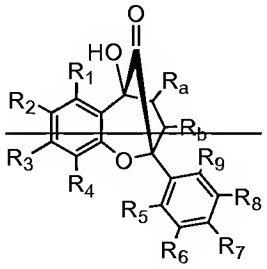
~~reacting the oxidopyrylium species obtained with a dipolarophile (IV) to obtain a compound with an aglain core structure (V'); and~~

converting the compound of formula (V') ~~with an aglain core~~ into a compound of formula (IX'): ~~a forbaglin derivative (IX'), wherein compounds (II), (H_1), (IV), (V')~~

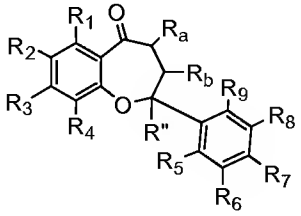
~~and (IX') have the following chemical structures:~~



~~(II)~~ ~~(II$_1$)~~ ~~(IV)~~



~~(V')~~

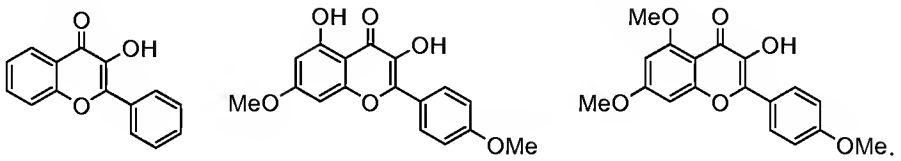


(IX')

wherein ~~R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R", R_a and R_b are identical or different and~~ R" is selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

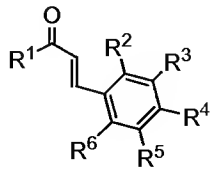
wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

51. **(Currently Amended)** The method of claim 50, wherein the ~~3-hydroxyflavone~~ 3-hydroxychromone derivative has one of the following chemical structures:



52. **(Currently Amended)** The method of claim 49 or 50, wherein the dipolarophile (**IV**) is

a ~~cinnamate derivative~~ compound with the following chemical structure:



wherein R^1 is selected from the group consisting of hydrogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, and a protecting group; and

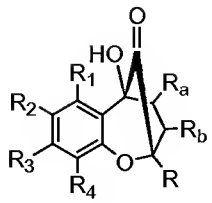
wherein R^2, R^3, R^4, R^5, and R^6 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, [[$-CHCl_2$,]] $\underline{-CHCl_2}$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

53. **(Currently Amended)** The method of claim 49 or 50, wherein converting the compound of formula (V) or (V') ~~with an aglain core structure~~ into a compound of formula (IX) or (IX') ~~a forbaglin derivative~~ comprises an oxidative cleavage.

54. **(Original)** The method of claim 53, wherein the oxidative cleavage comprises using $Pb(OAc)_4$.

55. **(Withdrawn/Currently Amended)** A compound having ~~with an aglain core structure prepared by the method of claim 20, wherein the aglain core containing compound has~~ the following chemical structure:

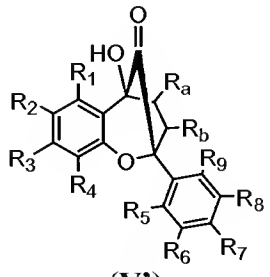


(V)

wherein R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

56. **(Withdrawn/Currently Amended)** The compound of claim 55 having ~~A compound comprising an aglain core structure prepared by the method of claim 21, wherein the aglain core containing compound has~~ the following chemical structure:



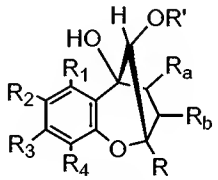
(V')

wherein R_5, R_6, R_7, R_8, and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, -

$CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

57. **(Withdrawn/Currently Amended)** A compound having ~~An aglain derivative prepared by the method of claim 30, wherein the aglain derivative has~~ the following chemical structure:



(VI)

wherein:

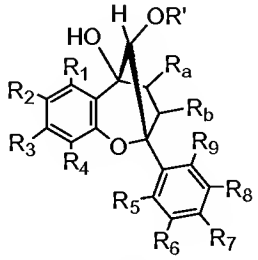
R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$; and

R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of

hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

58. **(Withdrawn/Currently Amended)** The compound of claim 57 having ~~An aglain derivative prepared by the method of claim 31, wherein the aglain derivative has~~ the following chemical structure:

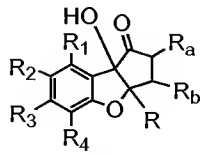


(VI')

wherein R_5, R_6, R_7, R_8, and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

59. **(Withdrawn/Currently Amended)** A compound having ~~A rocaglamide derivative prepared by the method of claim 37, wherein the rocaglamide derivative has~~ the following chemical structure:

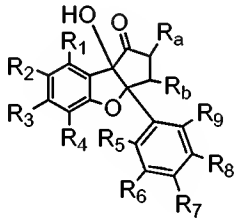


(VII)

R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

60. **(Withdrawn/Currently Amended)** The compound of claim 59 having ~~A rocaglamide derivative prepared by the method of claim 38, wherein the rocaglamide derivative has~~ the following chemical structure:



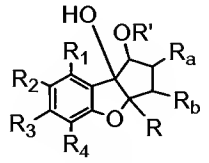
(VII')

wherein R_5, R_6, R_7, R_8, and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic,

heteroaromatic, aryl, and heteroaryl.

61. **(Withdrawn/Currently Amended)** A compound having ~~A rocaglamide derivative prepared by the method of claim 43, wherein the rocaglamide derivative has~~ the following chemical structure:



(VIII)

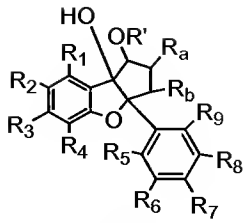
wherein:

R' is selected from the group consisting of hydrogen, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-S(O)R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, and $-N(R_x)S(O)_2R_x$; and

R_1, R_2, R_3, R_4, R, R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

62. **(Withdrawn/Currently Amended)** A compound having ~~A rocaglamide derivative prepared by the method of claim 44, wherein the rocaglamide derivative has~~ the following chemical structure:

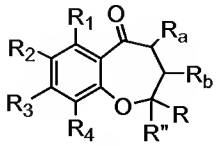


(VIII')

wherein R_5, R_6, R_7, R_8, and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

63. **(Withdrawn/Currently Amended)** A compound having ~~A forbaglin derivative prepared by the method of claim 49, wherein the forbaglin derivative has~~ the following chemical structure:



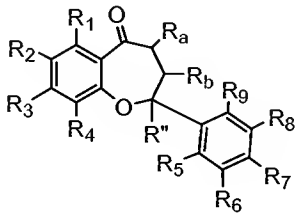
(IX)

wherein R_1, R_2, R_3, R_4, R, R", R_a and R_b are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$,

$-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$;

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

64. **(Withdrawn/Currently Amended)** The compound of claim 63 having ~~A forbaglin derivative prepared by the method of claim 50, wherein the forbaglin derivative has~~ the following chemical structure:



(IX')

wherein R_5, R_6, R_7, R_8, and R_9 are identical or different and selected from the group consisting of hydrogen, halogen, hydroxy, alkoxy, aryloxy, heteroalkoxy, heteroaryloxy, thioalkyl, thioaryl, acyl, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, heteroaryl, alkylamino, amino alkyl, arylamino, amino aryl, a protecting group, $-NO_2$, -CN, $-CF_3$, $-CH_2CF_3$, $-CHCl_2$, $-CH_2OH$, $-CH_2CH_2OH$, $-CH_2SO_2CH_3$, $-C(=O)R_x$, $-CO_2(R_x)$, $-C(=O)N(R_x)_2$, $-OC(=O)N(R_x)_2$, $-OC(=O)R_x$, $-OCO_2R_x$, $-S(O)R_x$, $-S(O)_2R_x$, $-NR_x(CO)R_x$, $-N(R_x)CO_2R_x$, $-N(R_x)C(=O)N(R_x)_2$, $-N(R_x)S(O)_2R_x$, and $-S(O)_2N(R_x)_2$,

wherein each occurrence of R_x is independently selected from the group consisting of hydrogen, aliphatic, alicyclic, heteroaliphatic, heterocyclic, aromatic, heteroaromatic, aryl, and heteroaryl.

65. **(Withdrawn/Currently Amended)** A medicament comprising a compound according to any one of claims 55 through 64 and a pharmaceutically acceptable carrier ~~Use of an aglain derivative (VI) of claim 57 for the manufacture of a medicament~~.

66-78. **(Cancelled)**

79. **(New)** A method comprising the step of administering to a subject suffering from or susceptible to one or more cancers or cancerous conditions a medicament comprising a compound according to any one of claims 55 through 64 and a pharmaceutically acceptable carrier.

80. **(New)** A method comprising the step of administering to a subject suffering from or susceptible to one or more conditions associated with cellular proliferation a medicament comprising a compound according to any one of claims 55 through 64 and a pharmaceutically acceptable carrier.

81. **(New)** A method comprising the step of administering to a subject suffering from or susceptible to one or more NF-κB-dependent conditions a medicament comprising a compound according to any one of claims 55 through 64 and a pharmaceutically acceptable carrier.